We claim:

1. A method of forming a passive transmission line device in an integrated circuit, the method comprising:

Forming a recess insulating layer having a top surface and a bottom surface;

Forming a recess in said recess insulating layer, said recess having walls and a bottom surface;

Forming an enhancement layer covering said walls and said bottom surface of said recess, said enhancement layer having substantial magnetic permeability or substantial dielectric permitivity or both substantial magnetic permeability and substantial dielectric permitivity; and

Forming a conductive line over said enhancement layer in said recess, said conductive line having an upper surface that does not extend laterally outside said recess.

2. The method according to claim 1, wherein the upper surface of said conductive line is substantially coplanar with said upper surface of said first insulating layer.

3. The method according to claim 1, wherein the upper surface of said conductive line is substantially coplanar with

an upper surface of said enhancement layer for portions of said enhancement layer that do not overlie said recess.

4. The method according to claim 1, further comprising forming a second enhancement layer that overlies said upper surface of said conductive line, said second enhancement layer having substantial magnetic permeability or substantial dielectric permitivity or both substantial magnetic permeability and substantial dielectric permitivity.

5. The method according to claim 1, wherein said recess insulating layer is formed on a first insulating layer having a top surface and a bottom surface.

6. The method according to claim 5, wherein said first insulating layer includes at least one via extending there through from the top surface of said first insulating layer to the bottom surface said first insulating layer, and a conductive plug fills said via.

7. The method according to claim 6, wherein said bottom surface of said recess includes a top surface of said conductive plug.

8. A method of fabricating a passive transmission line element, comprising:

sequentially depositing an enhancement layer and a conductive layer material on a base structure that includes a bottom surface, a top surface, and at least one recess having a bottom recess surface and sidewalls, to provide a precursor structure having a top surface, said enhancement layer having substantial magnetic permeability or substantial dielectric permitivity or both substantial magnetic permeability and substantial dielectric permitivity; and

etching over the entire top surface of said precursor structure to completely remove said conductive layer material from regions that do not overlie said at least one recess to provide at least one conductive line respectively disposed in said at least one recess, and each at least one conductive line having a respective top surface that is disposed over and does not extend laterally beyond its corresponding said at least one recess, each of said at least one passive transmission line

element comprising a respective said at least one conductive line and a corresponding portion of said enhancement layer that overlies the corresponding at least one recess and that surrounds sides and bottom of the respective conductive line.

9. The method according to claim 8, wherein said etching includes chemical-mechanical polishing.

10. A method for fabricating a passive transmission line device in an integrated circuit, the method comprising:

providing an insulating layer;

using a damascene process to form said passive transmission line device in said insulating layer, said passive transmission line device comprising a conductive line and a first enhancement layer, said conductive line embedded in said first enhancement layer that covers the bottom surface and sidewalls of a recess formed in said insulating layer during the damascene process, said first enhancement layer having substantial magnetic permeability or substantial dielectric permitivity or both substantial magnetic permeability and substantial dielectric permitivity.

11. An integrated circuit device, comprising:

an insulating layer that includes a recess having a bottom surface and walls; and

a passive transmission line device comprising a conductive line and a first enhancement layer, said first enhancement layer disposed over said bottom surface and said walls of said insulating layer, said conductive line embedded in said first enhancement layer that is formed on, said first enhancement layer having substantial magnetic permeability or substantial dielectric permitivity or both substantial magnetic permeability and substantial dielectric permitivity.

12. The integrated device at claim 11, wherein said method of forming a passive transmission line device in an integrated circuit, the said conductive line has an upper surface that does not extend laterally outside said recess.

13. The integrated device of claim 12, wherein the upper surface of said conductive line is substantially coplanar with said upper surface of said first insulating layer.

14. The integrated advice of claim 12, wherein the upper surface of said conductive line is substantially coplanar with an upper surface of said enhancement layer for portions of said enhancement layer that do not overlie said recess.

15. The integrated device of claim 12, further comprising forming a second enhancement layer that overlies said upper surface of said conductive line, said second enhancement layer having substantial magnetic permeability or substantial dielectric permitivity or both substantial magnetic permeability and substantial dielectric permitivity.

16. The integrated device of claim 12, wherein said recess insulating layer is formed on a first insulating layer having a top surface and a bottom surface.

17. The integrated device of claim 16, wherein said first insulating layer includes at least one via extending there through from the top surface of said first insulating layer to the bottom surface said first insulating layer, and a conductive plug fills said via.

18. The integrated device of claim 17, wherein said bottom surface of said recess includes a top surface of said conductive plug.

19. A passive transmission line element, comprising:

an enhancement layer and a conductive layer material sequentially depositing on a base structure that includes a bottom surface, a top surface, and at least one recess having a bottom recess surface and sidewalls, to provide a precursor structure having a top surface, said enhancement layer having substantial magnetic permeability or substantial dielectric permitivity or both substantial magnetic permeability and substantial dielectric permitivity; and wherein the entire top surface of said precursor structure etched to completely remove said conductive layer material from regions that do not overlie said at least one recess to provide at least one conductive line respectively disposed in said at least one recess, and each at least one conductive line having a respective top surface that is disposed over and does not extend laterally beyond its corresponding said at least one recess, each of said at least one passive transmission line element comprising a respective said at least one conductive line and a corresponding portion of

said enhancement layer that overlies the corresponding at least one recess and that surrounds sides and bottom of the respective conductive line.

20. The passive transmission line element of claim 19, wherein said etch of said entire top surface includes chemical-mechanical polishing.

21. A passive transmission line device in an integrated circuit, comprising:

An insulating layer, wherein the passive transmission line is formed using a damascene process in said insulating layer, said passive transmission line device comprising a conductive line and a first enhancement layer, said conductive line embedded in said first enhancement layer that covers the bottom surface and sidewalls of a recess formed in said insulating layer during the damascene process, said first enhancement layer having substantial magnetic permeability or substantial dielectric permitivity or both substantial magnetic permeability and substantial dielectric permitivity.